

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/369417314>

A History of Maritime Archaeological Thought

Chapter · March 2023

CITATIONS

2

READS

520

1 author:



[Peter B. Campbell](#)

Cranfield University

35 PUBLICATIONS 224 CITATIONS

SEE PROFILE

The background of the cover is an abstract, textured composition. The upper half is dominated by a vibrant, textured red-orange color, resembling a close-up of coral or a mineral surface. This transitions into a darker, more complex area of teal and dark blue at the bottom, with some lighter, yellowish-brown patches in between, creating a sense of depth and movement.

CONTEMPORARY PHILOSOPHY FOR MARITIME ARCHAEOLOGY

*Flat Ontologies,
Oceanic Thought,
and the Anthropocene*

SARA A. RICH & PETER B. CAMPBELL (EDS)



This is a free offprint – as with all our publications the entire book is freely accessible on our website, and is available in print or as PDF e-book.

www.sidestone.com

CONTEMPORARY PHILOSOPHY FOR
MARITIME ARCHAEOLOGY

*Flat Ontologies,
Oceanic Thought,
and the Anthropocene*

SARA A. RICH & PETER B. CAMPBELL (EDS)

© 2023 Individual authors

Published by Sidestone Press, Leiden
www.sidestone.com

Imprint: Sidestone Press Academics
This book has been peer-reviewed.
For more information see www.sidestone.com

Lay-out & cover design: Sidestone Press
Photograph cover: Oil spill (photo: Yellow Boat | stock.adobe.com)

ISBN 978-94-6427-039-6 (softcover)
ISBN 978-94-6427-040-2 (hardcover)
ISBN 978-94-6427-041-9 (PDF e-book)



Contents

Acknowledgements	9
Prelude: A History of Maritime Archaeological Thought	11
Peter B. Campbell	
1. Collapse, Cataclysm, and Eruption: Alien Archaeologies for the Anthropocene	35
Sara A. Rich and Peter B. Campbell	
2. The Shipwreck of Theseus: Philosophy and Maritime Archaeology	57
Graham Harman	
3. What Washes Up on the Beach: Shipwreck, Literary Culture, and Objects of Interpretation	75
Steve Mentz	
4. An Anthropocene Section	87
Matt Edgeworth	
5. Maritime Christening: Anthropomorphism and the Engender(bend)ing of Metaphor	105
Jeremy Killian and Sara A. Rich	
6. Complicit Objects and New Materialist Praxis	123
Claire S. Watson	
7. Assemblage Theory and the Mediative Practice of Ship Hull Reuse	147
Chelsea M. Cohen	
8. 'The Biggest Museum Gallery in the Whole World': Virtual Excavation and the Musealization of the Seafloor	169
Lisa Yin Han	
9. Naufragic Architecture in the Anthropocene	187
Sara A. Rich, Leila Hamdan and Justyna Hampel	
10. Octopodology and Dark <i>Amphorae</i>: Alien Archaeologies, Reflexivity, and the Non-Human Afterlives of Objects in the Sea	205
Peter B. Campbell	

11. Water as a Hyperfact	231
Johan Normark	
12. Drift	251
Þóra Pétursdóttir	
13. Contemporary Philosophies for Maritime Archaeology: A Response	269
Joe Flatman	
14. OOO, Archaeology, and the Anthropocene. Comments on Maritime Archaeology and Anthropocene Philosophy	279
Christopher Witmore	
15. Compelled by Things: A Response to <i>Contemporary Philosophy for Maritime Archaeology</i>	309
Matthew Harpster	
16. Theory at Sea. Some Reflections from the Gunwale	317
Björnar J. Olsen	
Conclusion: If on a Winter's Night a Ship Wrecks	335
Peter B. Campbell	
Author Biographies	351

Prelude

A History of Maritime Archaeological Thought

Peter B. Campbell

Introduction

Before considering contemporary philosophy and maritime archaeology, it is worth reviewing the history of maritime archaeological thought. R. G. Collingwood, notable as the only professor of philosophy who was also a practicing archaeologist,¹ argued ‘no historical problem should be studied without studying... the history of historical thought about it’ (Collingwood, 1939, p. 132), which is the approach of Bruce Trigger’s *A History of Archaeological Thought* (2006, pp. 1-2). Trigger’s monumental study of archaeology’s intellectual trajectory provides a framework for understanding the broader field; however, it rarely touches on thought relating to archaeology under water, largely due to maritime archaeology being ‘theory agnostic’ according to Matthew Harpster.² Indeed, the relationship between maritime archaeology and theory, especially engagement with new philosophies, has been fraught. While archaeology and the related field of anthropology have significant cohorts of scholars who experiment and appraise new philosophical and theoretical approaches, contemporary maritime archaeology has been slow to do so. However, this was not always the case if we look at the pursuit of knowledge through underwater excavation, which has a history of over 250 projects from 1006 until the advent of modern maritime archaeology following the excavation of the Bronze Age shipwreck at Cape Gelidonya in 1960 (Campbell and Flemming, 2022). This chapter provides a short, non-comprehensive history of maritime archaeological thought which might – as Collingwood advocates – provide useful context for the rest of the volume.

For a full history of theory in archaeology see Trigger’s landmark study (2006), while Oliver Harris and Craig Cipolla’s *Archaeological Theory in the New Millennium* (2017) provides a useful overview of contemporary theory. Theory in (terrestrial) archaeology is not discussed in this chapter except when necessary for context. A longer discussion of maritime archaeology

1 Collingwood introduced question-based archaeology, advocating against excavation unless there is a research question guiding the work and thereby cementing the transition from Antiquarianism to archaeology as a field of study.

2 ‘Are Maritime Archaeologists Theory Atheists, Agnostics, or Adjacent?’, Nordic TAG 2022, Oslo, Norway.

theory has been prepared by Chuck Meide (2013), while Babits and van Tilburg (1998) and Staniforth and Nash (2008) provide helpful context. Readers should note that the following sections review key paradigms, but not the work of individual scholars or single publications, thus important work by Virginia Dellino-Musgrave, Helen Farr, Joe Flatman, David Gibbins, John Goggin, Toby Parker, Mark Staniforth, and others are not detailed to a great extent.

Christian Worldview (11th to 18th centuries)

Archaeology as a field did not develop in earnest until the 20th century; however, the pursuit of knowledge from archaeology under water begins much earlier. These were intellectual pursuits distinguishable from salvage for profit. These early excavations used material culture to address questions about the past, the Earth, and oneself or one's culture. Therefore, the intellectual trajectory of maritime archaeology begins with Abbot Ealdred of St. Albans, who in 1006 led the earliest known shipwreck excavation in Europe (Ellmers 1973). The Abbot and his successor Eadmer received permission to excavate the Roman ruins of Verulamium along the River Ver until Viking raids ended work in the region, a health and safety hazard that fortunately no longer affects projects.

The monastic records state, '[T]he diggers... found close to the river bank oak timbers with nails sticking inside and smeared with naval pitch (things which used to be used in ships). They also discovered some naval tackle, namely half-rusted anchors and pine oars, a definite and obvious sign of sea water which once upon a time bore the ship to Verulamium' (Preest and Clark, 2019). An 11th century shipwreck discovery is interesting, but the account is better understood in the context of place-making and conferring historical legitimacy (Harris, 2017, pp. 45, 54). The full account mixes pagan storytelling (i.e. discovery of a dragon den in the Roman ruins), historical and Christian legitimacy (i.e. discovery of a book of Saint Alban's life), and practical enforcement of the abbots' powers (i.e. destruction of Verulamium's remains that were being used by squatters, prostitutes, and criminals). The shipwreck is one piece of a narrative meant to provide legitimacy to the abbot and the cathedral at St. Albans. Specifically, the shipwreck denotes changes to the Earth and in Christian worldview the sea is an entity that struggles against God (e.g., Genesis, Noah's flood, and Exodus), a struggle that only comes to a close with the final utopia in *Revelations* (Connerly, 2006, p. 499). The final utopia is described as, 'And I saw a new heaven and a new earth: for the first heaven and the first earth were passed away; and there was no more sea' (Rev 21:1 KJV).

The reason for discussing this odd case is not only that it is the oldest known account, but the fact that there are many similar accounts in subsequent centuries. The discovery of shipwrecks became a theme that supported the Christian worldview of the Biblical Flood, an event that defined scholarship for centuries. Many scholars sought evidence of the antediluvian, or pre-Flood, era, including early geologists and archaeologists. For example, ships interpreted in this way were found in Bristol in 1480 (Neale, 2000, p. 237), Berne in 1483 (Hooke, 1705, p. 439), and Lima in 1635 (Nieremberg, 1635, pp. 72-74).

The lesson of theory in this period is twofold; first, scholars interpret archaeological materials based on their worldview. Today we understand that these interpretations can look odd if one does not use a research design that mitigates one's cultural blindspots. Second, Christian and colonial theories have not entirely left us, as antiquated as the antediluvian theory may seem to us. In another theory from the period, while Spain

was undertaking the colonial conquest of the Americas the Jesuit priest Jose de Acosta proposed the peopling of the Americas from Asia via a land bridge (de Acosta, [1590] 2002).

Notably, this section is Eurocentric but Medieval sources using underwater archaeological material from elsewhere are currently unknown. A survey of Arabic and Persian sources, for example, provide few mentions of submerged archaeological sites in texts by geographers such as Nâsir-i-Khusrau (1047), Muhammad al-Idrisi (1154), Ibn Khaldûn (1377), Ibn Jubayr (1145-1214) and Abû Abdallâh Ibn Battûta (1325-1354). However, given the many Arab and Persian texts on the natural sciences and geology, there are likely discussions of the processes submerging archaeological sites prior to the 20th century.

Renaissance and Engineering (15th to 16th centuries)

The Renaissance brought about new ideas, but many were rooted in the past. The period was also firmly entrenched in a Christian worldview, in particular the idea that all knowledge was revealed at the moment of creation and subsequently dispersed or lost. It is this concept that led Renaissance scholars to look to the past, searching both for texts and excavating archaeological sites to ‘recover’ lost knowledge and technologies. While the reader may be familiar with later Enlightenment approaches to scientific thought and the *discovery* of knowledge, Renaissance thinkers sought to *recover* knowledge.

When Petrarch, writing in the 14th century, described the period before his lifetime as a ‘Dark Age’, he bookended these ‘Middle Ages’³ with the grandeur of Rome and a rebirth of Classical knowledge, or Renaissance (Mommsen, 1942; McLaughlin, 1988). Within the conception of these time periods is the ‘loss’ (during the Dark or Middle Ages) of Classical knowledge and the ‘recovery’ of it in the Renaissance. By the time of the first intellectual maritime archaeological endeavour in Lake Nemi, the individual who conceived of the project, Leon Battista Alberti, saw the work as part of this recovery of lost knowledge.

A new field developed during the Renaissance, one initially frowned upon by the establishment: engineering. The burgeoning engineers, often regarded as polymaths who undertook painting, sculpture, mathematics, and architecture, also practiced archaeology to inform these different disciplines. It is through texts such as Vitruvius and archaeological excavations of Roman ruins that they sought to rediscover knowledge that had been lost. Archaeological excavation on land was widespread, but Leon Battista Alberti began the discourse on maritime archaeology and published the first treatise on ancient ship construction (McManamon, 2016).

Alberti was hired to raise the Roman ships that were sunk in Lake Nemi outside Rome, but his interest in the project focused on ancient methods of ship construction in order to build better vessels in his own day. Alberti’s book *Navis* on ship construction, which he references in *Architettura* (Alberti, [1452] 1988), was either never published or is now lost. There is evidence that Leonardo da Vinci may have read it (Alberti, 1988, p. 384 n.44), so it may have only been available in Florence. The brief sections on ship construction that survive in *Architettura* demonstrate Alberti’s grasp of Roman shipbuilding techniques and thought them an improvement over contemporary approaches. ‘Recently, during the

3 The term ‘Middle Ages’ was created in the 15th century by Flavio Biondo who is regarded as the ‘Father of Archaeology’.

preparation of this book, fragments of one of Trajan's ships were raised from the bottom of Lake Nemi, where they had lain submerged for more than 1,300 years: I noticed that the pine and cypress had lasted extremely well. The paneling had been covered on the outside with a double layer of fabric, consisting of linen soaked in black pitch, itself protected by sheets of lead fastened together with copper nails. In building a ship, the ancients would use the lineaments of a fish; so that its back became the hull, its head the prow; the rudder would serve as its tail, the oars as its gills and fins' (Alberti, 1988, pp. 136-137).⁴ While still entrenched within the Christian worldview and the underlying assumption about knowledge, Alberti and his contemporaries differ from Ealdred in an important way. Ealdred sought to explain the world in terms of the Bible, evidenced by archaeological remains. It is a form of 'Ruling Theory' where the evidence is made to fit a conclusion (Rodgers et al., 2005). Alberti was guided by the Christian worldview to look to the past, but sought to understand the objects he found without predetermined conclusions.

Antiquarianism and Geology (16th to 19th centuries)

Alberti and his contemporaries turned questions about the past on its head, and were only a step away from interrogating artifacts on their own terms, rather than as proof of Christian narratives. That shift came with Francis Bacon (1561-1626), who 'sought to persuade scholars to cease relying on revealed or authoritative knowledge to understand the world and instead to employ observation, classification, comparison, and where possible experimentation to achieve this goal. In this way, scientific knowledge was made the ever-developing product of communities of researchers' (Zimmerman, 2001, p. 117). Scholars such as Helisäus Rößlin, John Leland, Nicolaes Witsen and Robert Hooke studied ritual deposits in springs, shipwrecks, and sunken cities to address questions about past cultures, ship construction, and Earth's forces.

Antiquarians grew out of the Renaissance discoveries, their name belying an interest in the past. The London Society of Antiquaries was founded in 1572 with many members owning copies of Leland's prized notebooks, which formed a core of their knowledge, though the Society was later disbanded by suspicious monarchs (Trigger, 2006, p. 84). The antiquarians collected descriptions of architecture, ruins, and inscriptions, often in the form of itineraries, though later published as papers in proceedings or as books that are quite similar to academic publications today (e.g., Hooke, 1705; Leland, [1543]1768). A second Society of Antiquaries of London was founded in 1707 and continues to this day.

Antiquarians contended with the past without much of the basic information that we benefit from today. They lacked dating methods and were burdened with the Christian worldview, so they divided the past into antediluvian and postdiluvian periods since the Biblical flood was their primary point of reference in the past. Their work is primarily descriptive and typically linked to historical texts to provide context. This is not to say that their research was insignificant; Hooke's research of Earth movements, for example, drew on a wide range of maritime archaeological observations (among

4 John McManamon's book on the Lake Nemi ships as the origins of nautical archaeology is an essential read for those interested in this subject (McManamon, 2016).

other types including paleontology and geology) from Europe to South America to arrive at important conclusions about the planet's dynamism (Hooke, 1705).

During this period, military officers frequently applied their Classical education while on missions. Royal Navy and French military expeditions to Egypt and Greece revealed significant information about archaeological sites, while also resulting in the looting (most common) or purchase (less common) of statues, architectural elements, and portable cultural property (Jomard, 1822; Beechey and Beechey, 1828; Puillon de Boblaye, 1836; Smyth, 1854). Underwater mapping and site descriptions by navy specialists during this period are particularly useful for today's maritime archaeologists. However, these military accounts underscore how Antiquarianism could be an extension of the colonial project, exploiting indigenous communities for prestige at home.

Antiquarian interest in Earth movements catalyzed in the first half of the 19th century with the work of Charles Lyell. The antiquity of the Earth was best determined through change and Lyell drew upon natural and archaeological evidence to create a new field: geology. *Principles of Geology* gave birth to the field and its frontispiece is the Roman ruins of the Macellum of Pozzuoli where Lyell gained significant insight into natural forces (Lyell, 1830). The Macellum has undergone periods of submergence and re-emergence due to the bradyseism, which Lyell was able to determine through the endolithic marine borers that had damaged the marble columns when submerged. A separation between geology and archaeology was not distinguished at this time and Lyell clearly had an appreciation for archaeology's ability to inform about Earth process. He wrote, 'It is probable that a greater number of monuments of the skill and industry of man will, in the course of ages, be collected together in the bed of the ocean than will exist at any one time on the surface of the continents' (Lyell, 1830, p. 150). Lyell's subsequent book, *Geological Evidences of the Antiquity of Man*, dealt directly with what we would today term archaeology (Lyell, 1863). It is notable that maritime archaeology served as foundational elements of both engineering in the 15th century and geology in the 19th century, demonstrating the theoretical potential of submerged cultural heritage for addressing 'big' questions.

Culture-Historical and Historical Particularism

Between the foundation of geology and the foundation of maritime archaeology in 1960, there are several hundred projects underwater. These including archaeologists who donned diving gear to survey or excavate underwater, including Heinrich Ulrichs (1843), Odo Blundell (1908), Byron Kuhn de Prorok (1924), and Konstantin Grinevich (*Revue Archéologique*, 1931).⁵ Archaeologists in this period did not use philosophy to make sense of material culture, being part of what is termed culture-historical archaeology which sought the origins and migrations of cultures (Trigger, 2006, p. 303). The archaeologists were specialists of specific time periods or regions, or were art historians: Classical Greece

5 This is also true for projects where the leading archaeologist did not dive, but nevertheless provided either exceptional discoveries or publications: the Antikythera shipwreck (Svoronos, 1902), Naples' submerged ruins (Günther, 1903), the Mahdia shipwreck (Merlin, 1908), the submerged ruins of Alexandria (Malaval and Jondet, 1912), the Lake Nemi shipwrecks (Ucelli, 1950), *Elefanta* (Ekman, 1942), submerged ruins of Sidon and Tyre (Poidebard, 1939; Poidebard and Lauffray, 1951), Fos-sur-Mer Roman villa (Beaucaire, 1964), the Albenga shipwreck (Lamboglia and Pederzini, 1965), and the Grand Congloué shipwreck (Benoît, 1961).

in the case of Ulrichs, Scottish crannogs for Blundell, Carthaginian and Roman North Africa for Prorok, and Classical Period Crimea for Grinevich.

A change began with the incorporation of explicit theory when archaeologists interacted with anthropologists, especially Franz Boas, Alfred Radcliffe-Brown, and Bronisław Malinowski (Trigger, 2006, p. 365). They were practicing what Boas articulated as seeking to understand the culture of specific populations of people (1920), which Marvin Harris termed 'historical particularism' (1968). This approach would become dominant among maritime archaeologists in the 1950-70s.

The 1950-60s saw a significant increase in interest among, on one hand, ship and boat specialists and on the other hand underwater archaeologists. The joining of these two intellectual trajectories provides the key paradigm in nautical archaeology that the field uses to this day. Norwegian Olaf Hasslöf arrived at a key insight during his research into traditional boatbuilding, observing that certain vessels had a shell-based structural system while others were frame-based (Hasslöf, 1958, 1963, 1972). Hasslöf focused on Nordic traditions, but his observation was picked up by other scholars including Basil Greenhill who was working on a broad history of watercraft. Greenhill supplemented Hasslöf's findings by noting that these approaches also differed in assembly sequence; shell-based vessels were built shell-first (1976). It was Lionel Casson who had been keeping abreast of the underwater excavations in France, Italy, and Greece (Casson, 1953) that transferred the concept to ancient Mediterranean ship construction (1963). Lucien Basch further developed the paradigm by identifying 'active' and 'passive' frames (1972). Contributions were provided by pioneers such as Richard Steffy (2006), Patrice Pomey (1988), and Sean McGrail (1997), among others. The dichotomy of shell and frame sat uncomfortably with some scholars who noted outliers, especially in Northern Europe, which led Beat Arnold to propose a third shipbuilding approach in 1988 called 'bottom-based construction' (Hocker, 2004, p. 7). These scholars are historical particularists, using description, historical texts, and ethnography to understand specific contexts. Their contributions are significant and have endured, despite the pushback that historical particularism received with the introduction of the idea that 'archaeology is anthropology or it is nothing' (Willey and Phillips, 1958, p. 2).

Historical particularism received a poor reputation in archaeology, perhaps unfairly, following the anthropological turn of New Archaeology, or Processualism. Historical particularism focuses on situating artifacts within a certain culture, which readers will be familiar with from a wide range of studies even today. In maritime archaeology, George Bass is the most prominent proponent (1966). He published 'A Plea for Historical Particularism in Nautical Archaeology' in the Processual Archaeology focused volume *Shipwreck Anthropology* (Bass, 1983). The field did not heed it.

The primary criticism of maritime archaeology in the 1980s and 1990s by (terrestrial) archaeology was that maritime archaeologists only produced descriptive accounts or documentary records, i.e. historical particularism (Veth, 2008, pp. 13-14). Archaeology was undergoing a change, 'break[ing] out of its famous place and famous person styles of research and its historical particularism to seek broader humanistic and scientific goals' (Adams, 1993, p. 23). The theoretical changes occurred in terrestrial archaeology first, which is the root of the criticism that maritime archaeology is theory-less. The cause, and continuation, was maritime archaeologists' slow adoption of Processual Archaeology in the 1960-80s and subsequently Post-Processual Archaeology in the 1980-90s.

New Archaeology and Processualism

The creation of New Archaeology followed publications by Gordon Willey and Philip Phillips (1958) and Joseph Caldwell (1959) and it centered anthropology within archaeological inquiry (Binford, 1972, pp. 2-13; Trigger, 2006, pp. 294-300). It was a revolution in theory, but one that followed revolutions in scientific methods such as radiocarbon dating, which opened up new possibilities for understanding chronologies. The joining of anthropology and scientific methods led advocates to apply a hypothetico-deductive model to archaeological research, which stood at odds with previous approaches.

If there are two 'theory' books that every introductory course in underwater archaeology teaches, then they are *Maritime Archaeology* (Muckelroy, 1978) and *Shipwreck Anthropology* (Gould, 1983b), both volumes that introduced Processualism to the field. The first was written by Keith Muckelroy and the book served as an organizing manifesto for the burgeoning field. He notes that 'as things stand in the late 1970s, [there is a] remarkable lack of development or systematisation, when compared with most other archaeological sub-disciplines. This arises directly from the fact that it is a relatively new study, and is only now reaching the position where the data-base is sufficiently extensive to allow some tentative steps in defining the discipline', deficiencies which he classifies as 'academic immaturity' (Muckelroy, 1978, p. 10). He applies Processual Archaeology to maritime data, such as his models of site formation processes and archaeological knowledge formation (Muckelroy, 1978, pp. 158, 249). It is Muckelroy who coined the term 'maritime archaeology' (Muckelroy, 1978, p. 9), which has been used throughout this chapter, moving beyond the particularism of nautical archaeology toward the interconnected qualities of maritime communities. Were it not for a tragic diving accident which took his life in 1980, maritime archaeological theory may have made further strides under his intellectual guidance.

Shipwreck Anthropology followed several years later, the proceedings of a conference organized by Richard Gould. Anthropology had been critical for maritime archaeology as a sub-field and, as argued by Richard Gould, among others, it was the best lens through which to understand past cultures (Gould, 1983a). Gould gathered key maritime archaeologists including Bass, Daniel Lenihan, Larry Murphy, and Wilburn 'Sonny' Cockrell, but also luminaries in Processualism from other corners of archaeology including Patty Jo Watson and Cheryl Claassen from cave archaeology, Mark Leone of Critical Theory, and prehistoric archaeologists Peter Schmidt, Stephen Mrozowski, and E. Gary Stickel. Muckelroy was due to attend, but his accident occurred shortly beforehand. Despite Bass' plea for historical particularism, the volume is a call to action for theory in maritime archaeology and forays into different applications of Processual Archaeology.

Post-Processualism

Post-Processualism arrived in reaction to Processualism's positivist model, arguing it lacked explanatory ability for critical aspects of culture including the intangible, symbolism, and emic, or internal, community perspectives (Hodder, 1985). As Alice Kehoe writes, 'Obsolete paradigms entail inadequate explanations and cause us to dismiss, or actually fail to see, valuable data' (Kehoe, 1990, p. 29), so the movement toward Post-Processualism was necessitated by the research questions that Processualism could not address. This shift toward intangible aspects of culture, a human focus instead of material or social structures, met with derision among Processualists who saw the new approach as lacking

substance or reality. Binford wrote that archaeology had moved from ‘science to séance’ (1989), and significant tension between the theoretical camps existed for two decades.

The first application of post-processualism to maritime archaeology was a session titled ‘Stretching the envelope in theory and method’ hosted by Suzanne Spencer-Wood at the 1990 Society for Historical Archaeology conference (Spencer-Wood, 1990b). Besides Spencer-Wood, speakers included Gould, Kehoe, Parker Potter, Sheli Smith, Monica Hunter, and Charles Orser, and the papers were published in the conference proceedings. The contributions are important forays into Post-Processualism, such as Spencer-Wood’s ‘Beyond Reification’ which warns of the subjectivity of interpretation. ‘We need to counteract the natural psychological tendency towards reifying widely accepted assumptions, frameworks, and answers. Interpreting data in ways that confirm accepted models is often an unconsciously circular process that forms an intellectually limiting self-referential system... Continual questioning of accepted assumptions and models is needed to develop new insights about the past’ (Spencer-Wood, 1990a, p. 30). This approach underlines the contributions of Post-Processualism in its reflexive notion about the archaeologist as observer and theory-builder. The biases inherent in worldview and theoretical frameworks have to be kept in check, though are never completely eradicated. Spencer-Wood provides five recommendations for archaeological research to avoid reification: 1. Reveal political implications of models and paradigms, 2. Tolerate dissonance, 3. Value questions, 4. Tolerate ambiguity, and 5. Emphasize and publish unexplained data and unanswered questions (Spencer-Wood, 1990a, p. 32). The qualitative nature of these recommendations reflects Post-Processualism’s push beyond the certainty of Processualism, and are common to best practice today.

Post-Processualism was not met with widespread enthusiasm initially. ‘Few maritime archaeologists will be converted to Post-Processualism. Whereas traditional archaeology eschewed explicit theory, and New Archaeology provided the basis for field strategies, the latest vogue almost denies the “reality” of data’ (Gibbins, 1992, p. 83). Gibbins could not have been more wrong for Post-Processualism arrived with a ‘comet’ in the very same issue of the *International Journal of Nautical Archaeology (IJNA)* that his words were published in.

Maritime Cultural Landscapes

In *IJNA*’s first issue of 1992, the journal began with an article by Christer Westerdahl titled ‘The maritime cultural landscape’ (1992). If Hasslöf’s shell-based and frame-based observations set in motion maritime archaeology’s first great paradigm, then Westerdahl ignited the second. Flatman explained the impact, writing, ‘Westerdahl’s comet-like 1992 article...was one of those paradigm-shift documents that all academic disciplines occasionally produce, initiating a rethinking of every angle of archaeology, at once a looking-back at the old and a looking-forward at possible new agendas’ (Flatman, 2011, p. 311). Until Westerdahl’s article, maritime archaeology’s theoretical approaches lacked explanatory ability for the social aspects of maritime communities and sites, which was precisely what Post-Processualism was developed to address.

Westerdahl developed the paradigm during his field research in Sweden from 1972-82 (2011, p. 291). He drew on Orvar Löfgren’s concept of cognitive landscapes, which refers to ‘the mapping and imprinting of the functional aspects of the surroundings in the human mind. Man in landscape, landscape in man’ (Löfgren, 1981; Westerdahl, 1995, p. 5).

Landscape theory applied phenomenology which was a key part of Post-Processualism, especially the work of Michael Shanks (1992), Timothy Ingold (1993), and Christopher Tilley (1994). In these approaches the landscape is mediated through the human mind, rather than existing independently of the human mind.

Maritime cultural landscapes applies this theory to the sea and it has been widely adopted by the field. According to Westerdahl, the maritime archaeological landscape 'comprises the whole network of sailing routes, old as well as new, with ports and harbors along the coast, and its related constructions and remains of human activity, underwater as well as terrestrial' (Westerdahl, 1992, p. 6). While situated within landscape theory, Westerdahl provides his own approach, noting that while maritime landscapes are comparable to terrestrial landscapes they are not simply extensions of them. This model is broad in scope, but widely applicable which is why the approach has found such traction with maritime archaeologists. As the paradigm developed, it was simplified to be the 'sea, the foreshore and the coastal margin' (Parker, 2001, p. 22) and 'encompassing the entire coastline, from the land, across the intertidal zone and onto the seabed' (O'Sullivan and Breen, 2007, p. 240). It expanded a field focused primarily on technical details of shipwrecks and period-focused material cultural studies to include – or at least articulate and provide a framework for integrating – maritime anthropology and ethnography. Maritime ethnography has been a significant component of the field since the Antiquarians, but maritime cultural landscapes allowed for the integration in a theoretically consistent manner. This is in contrast to Muckelroy, for example, who could not integrate ethnography into Processualism, seeing the result as being inevitably 'both bad ethnology and bad archaeology' (1978, p. 7). Post-Processualism therefore opened new avenues for research. 'Indeed [the maritime cultural landscape] is generally seen as the way forward for maritime archaeology – moving from the study of nautical archaeology (e.g., ships and boats) to landscapes and seascape' (O'Sullivan & Breen, 2007, p. 240).

Maritime cultural landscapes are not without criticism. The framework has grown so broad in definition that anything can fit under the banner. It has been argued that the concept maintains an artificial gap between land and sea (Tuddenham, 2010, p. 9). The approach arguably does not address the agency of the sea, an issue with all cognitive landscape models, and scholars have sought to integrate it with contemporary theories, such as Van de Noort's 'hybrid landscapes' (2011, p. 44). Similarly, the author has argued that the idealist philosophy that underpins cognitive landscapes lacks explanatory ability for non-human agency, such as the sea, and therefore realist philosophies provide a path beyond cultural landscapes (Campbell, 2020).

Feminist and Queer Theory

Feminist theory has catalyzed change in interpretation since Laura Mulvey introduced the concept of the male gaze (1975). It exposed the fallacy of the impartial observer, demonstrating the biases within male-dominated theory and methods. In archaeology, studies have shown that male interpretations of Palaeolithic female figurines identified them as reified fertility goddess, while feminist theorists note that the figurines depict elder women past child-bearing age and have a perspective that suggests they are self-portraits (McCoid and McDermott, 1996; McDermott, 1996). Feminist theory contributed

to a reflexive turn in archaeology about who is doing the interpreting and what possible biases their worldview and experiences insert into the interpretations (Wylie, 1997).

In maritime archaeology, the adoption of Feminist theory was led by Sheli Smith and Suzanne Spencer-Wood (Smith, 1990; Spencer-Wood, 1990a). Smith raises similar concerns to McCoid and McDermott about the gendering of material culture through interpretation, writing, 'Thus the occurrence of artifacts generally referred to as domestic wares aboard ships neither confirms nor denies women's presence at sea... It is therefore important that archaeologists with knowledge of historical documentation of seafaring women study the archaeological remains without attachment of gender and look beyond the projected expectations and convention, in order to find the variance' (Smith, 1990, p. 40). Feminist theory continues with Jesse Ransley's publications critiquing the male-dominated nature of maritime archaeology (Ransley, 2007, 2008, 2010). She finds the male gaze within the field's theory and methods, such as the emphasis on 'objectifying, measuring and surveying' (Ransley, 2010, p. 626).

In 'Boats are for boys: Queering maritime archaeology', Ransley draws on Feminist theory but also applies Queer theory, providing an important critique of the field. She quotes Thomas Dowson, who states that 'Queer is by definition whatever is at odds with the normal, the legitimate, the dominant', while Queer theory 'actively and explicitly challenges the heteronormativity' (Dowson, 2000, p. 163; Ransley, 2010, p. 628). Ransley writes, 'If "queering" is questioning the dominant narrative, then the narrative of maritime archaeology, drawing on Western, modern constructions of gender, as well as the gendering of maritime activity as male, is ripe for queering... The dominant narrative that prescribes the business of boats and the sea as male... is evident in the development of our discipline, in our techniques, in our dominant theoretical frameworks and our prevailing interpretative narratives' (2010, p. 622). If each theory discussed in this chapter has provided different explanatory ability from those that came before, then Queer theory certainly provides new perspective on material culture as well as a reflexive perspective on the field. Ransley notes that the heteronormative approaches that dominate the field continue to fail certain questions about culture. 'Epistemological privilege in maritime archaeology remains rooted in an extremely conservative discourse that focuses on construction and function; it is about the physical not the social' (Ransley, 2010, p. 626).

Spencer-Wood, Smith, and Ransley perhaps speak more to researchers today than when they were published, as they have helped to shape a more diverse and inclusive archaeology. Their insights offer better explanatory ability for certain cultures and contexts than heteronormative male-dominated perspectives. Arguably, the seafaring culture of Bronze Age Minoans cannot be understood from the normative perspective (Graeber and Wengrow, 2021, p.435). The same is true for the next paradigm, which has likewise received muted response despite its prescience.

Postcolonial Nautical Archaeology

Postcolonial studies developed following Edward Said's landmark book *Orientalism* (1978). As a field studying maritime connectivity, including vessels used by colonial powers to transport the enslaved, one would imagine that postcolonial theory would feature prominently in maritime archaeology. Fred McGhee's 1997 article 'Toward a Postcolonial Nautical Archaeology' is a call to action for adopting postcolonial theory. He writes,

‘Nautical archaeology has not sufficiently problematised the concept of empire; it has not critically engaged European colonialism, its own colonial legacy, nor situated itself, in terms of power, in relation to the human subjects it studies’ (McGhee, 1997, p. 1). In this way article is reflexive, not only addressing the colonial nature of the material culture, but the field itself. This is because the two are interconnected: the research questions being asked preferred European ships of discovery over ships transporting the enslaved, and in the process obscures the difficult histories of genocide, enslavement, and inequality, as McGhee outlines. In postcolonial maritime archaeology these ships are cultural and political entities, and it is not possible to view them as technologies divorced from these activities (McGhee, 1997, p. 1; see also Watson, this volume). Eurocentric maritime archaeological research abdicates both scholarly and moral duties.

McGhee’s approach also identified the technological fetishism that has typified archaeology under water in the post-World War II period, a subject addressed in subsequent chapters (Han, this volume; Rich et al., this volume). He correctly posits that the focus on technology has come at the expense of theory. Citing George Bass, McGhee notes the emphasis on underwater technology rather than underwater archaeology: ‘This pervasive influence has left a huge theoretical gap within the field and has led to the privileging of technological and methodological hodgepodgery at the expense of substantive cultural, political, and historical analysis’ (McGhee, 1997, p. 1). Indeed, McGhee’s criticism of the lack of theory was widely held by terrestrial colleagues, but he identifies the Faustian bargain made to fund the field’s early forays.

McGhee was an early advocate for postcolonial archaeology with the advent in wider archaeology coming in the 2000s (Harris and Cipolla, 2017, p. 176). Unfortunately, maritime archaeology has engaged only on a limited basis with McGhee’s call to action (Flatman, 2003; Meide, 2013; but see Rich et al., 2022)

Behavioural Archaeology

If the 1990s saw maritime archaeological theory return to Scandinavia, then the theoretical center shifted to Australia in the early 2000s (Veth, 2008). Critical publications include rethinking site formation processes (Ward, Larcombe and Veth, 1999), the interdisciplinary research of SS *Xantho* (Veth and McCarthy, 1999; McCarthy, 2001), Mark Staniforth’s application of the Annales school to maritime archaeology (2003), and a coalescing of an Australian approach outlined in an edited volume (Staniforth and Nash, 2008).

One theoretical approach that emerged was Nathan Richard’s study of ship graveyards in Australia (2008), and later North America. Ship graveyards are a complex site type, as they can be studied for the individual construction of the vessels, the socio-economic trends of the assemblage, or how it is situated within the maritime cultural landscape. However, Richards recognized that this did not exhaust the potential of these sites, especially the social activities related to their formation. Richards applied behavioural archaeology to the sites, drawing on William Rathje’s studies of contemporary garbage deposits (Rathje and Murphy, 2001). Richards identified specific behaviours universal to vessel abandonment (2008), providing a framework for understanding social behaviours within maritime communities.

Cultural Evolution

Evolution in culture has been debated since Charles Darwin's *The Descent of Man* discussed societies (1871). Various iterations in terrestrial archaeology of Darwinian, techno-evolution, or cultural evolution have been attempted. Memetics, 'memes' being the mental version of genes, and cultural 'viruses' have been proposed as mechanisms for change in culture (Dawkins, 1976; Dunnell, 1995; Cullen, 2000), while phenotypes, genetic drift, and survival of the fittest have been adopted as components of this analogy (O'Brien and Shennan, 2010). Maritime archaeology has applied evolution to watercraft, though not engaging with these broader archaeological publications. David Conlin argues that 'It is almost impossible to open a book on ship design or ship construction without confronting the assumption that ships evolve in a progressive manner, one design building and improving upon those which preceded' (Conlin, 1998, p. 3). Daniel Zwick attempted to restart engagement with cultural evolution a decade later (2013). It is worth noting that many authors employ the term 'evolution' as shorthand to denote change, for example Lucien Basch (Basch, 1972, p. 9), though not meaning an evolutionary mechanism.

However, cultural evolution has been largely discredited. Even proponents acknowledge the lack of a mechanism for evolution in culture, writing, 'Whereas the modern synthesis of evolutionary theory has provided an encompassing scientific framework for the selection and transmission of biological adaptations, a convincing theory of cultural evolution has yet to emerge... applying evolutionary theory to culture remains little more than a suggestive trope' (McGraw et al., 2014, p. 1). While the analogy may appear to make sense superficially, as in Conlin's description, evolution does not describe the observable reality and lacks explanatory ability for questions about the past. In maritime archaeology specifically, Jon Adams and Johan Rönby have reviewed the evolutionary analogy and come to the conclusion that it does not provide an explanation for social change (2013, pp. 5-6). Colin Palmer sees the complexity of technological change as frustrating to Western reductionist thinking, whose followers try to understand why change occurs by turning to biological analogies (2000, p. 83). Evolution as a literary analogy for change is found throughout maritime archaeological publications; however, evolution as a mechanism that drives cultural change has met with broad dismissal (McGrail, 1998; Palmer, 2000; Adams, 2003, 2013; Whitewright, 2008; Blue and Palmer, 2010).

Actor-Network Theory

Actor-Network Theory (ANT) was developed by Bruno Latour (1987, 2005) and Michael Callon (1986), among others. The theory proposes that materially heterogeneous elements form actor-networks, or webs. ANT focuses on how associations are made or transformed (Dolwick, 2009, p. 36). The network seeks to dismiss the dualisms that frequent philosophy since Kant and Descartes, especially the privileging of the human mind. Applications of ANT in maritime archaeology have been led by Jim Dolwick (2008, 2009) and David Berg Tuddenham (2010, 2012a, 2012b). Dolwick uses ANT to review applications of social theory in maritime archaeology. Tuddenham uses ANT to re-examine maritime cultural landscapes and address the artificial gap between land and sea that the paradigm inadvertently maintains. He proposes a new term, 'maritimity', which he defines 'as the process of purification that takes place in the network, in

between the poles of Land and Sea. In this sense, maritimity is equivalent to the modern metaphysic as described by Bruno Latour (1993), with the same actants and process at work' (Tuddenham, 2010, p. 8). Engagement with ANT has been limited as other theories have built upon it, such as meshworks and entanglements (Ingold 2008; Hodder 2012). Contemporary philosophy likewise draws on Latour, so ANT has significantly influenced the development of new approaches.

Eclecticism and Pragmatism

This section differs from the others, as it is out of chronological sequence. It examines what some might term the 'reality' of maritime archaeological theory. Archaeology, it has been argued, requires a broad intellectual toolkit to interpret the past. Matthew Johnson and Adam Smith argue that archaeology is an 'undiscipline' since it draws heavily on theories developed in other fields (Johnson, 2006; Smith, 2006). This could be described as a mixed bag approach, or criticized as cherry-picking. As discussed above, Processualism struggles to address emic perspectives, while Post-Processualism is anti-positivist (Johnson, 2010, pp. 83, 119). A mixed approach draws on aspects of different theories but anchors them in a specific site. Jon Adams refers to this as 'eclecticism', while Trigger refers to it as 'theoretical convergence' and 'pragmatism' (Trigger, 2006, p. 497; Adams, 2013, p. 44). They are referring to the adoption of aspects of several theoretical approaches to address the questions that arise at an archaeological site rather than subscribing to a single 'Grand Theory' (Adams, 2013, p. 45).

Examples in maritime archaeology include Adams' influential model of ship construction, which explores the interrelated constraints on watercraft that affect their design. He argues that environment, materials, ideology, technology, tradition, economics, and purpose are all factors that constrain ship design, but that 'infinite fluidity' passes between the factors (Adams, 2013, p. 23). Robert Van de Noort uses a hybrid approach of maritime cultural landscapes with contemporary philosophy to understand the interconnectivities between landscape, technology, and culture (2004), then developed it further to address non-human agency (2011, pp. 27-30). A pragmatic approach can be useful, as you might wish to understand the technical capabilities of a sailing vessel (Processualism), but also understand how the social hierarchy on board manifested in the vessel's spaces and the patterning of material culture (Post-Processualism). The key to not cherry-picking from different theories – thereby accidentally incorporating poor interpretive aspects of certain approaches – is to have a carefully thought out research design that addresses the parameters of each question you are seeking to answer.

Contemporary Philosophy

Speculative Realism (SR) and Object-Oriented Ontology (OOO) are related philosophies that have been developed since 2007 by Levi Bryant (2011, 2014), Graham Harman (2016, 2018a, 2018b), Quentin Meillassoux (see English translations in Harman, 2015), and Timothy Morton (2007, 2013, 2016, 2019), among others. SR and OOO de-anthropocentrize existence and examine the agency of objects, which has led to new perspectives on the role of objects beyond human perception. Note that 'object' is a philosophical term, but archaeologists may prefer the synonymous term 'entity' since 'object' has specific meaning in the field.

SR and OOO are characterized by a shift from idealism to realism, since they do not privilege the subject (e.g., person, mind) over the object (e.g., artifact, landscape, the sea, ship, shipworm, etc.), and are therefore known as ‘flat ontologies’ (Harman, 2018a, p. 54). This ‘speculative turn’ challenges the subject-object correlationism of Kantian philosophy or Cartesian dualisms (e.g., human/nature, mental/physical, mind/body, etc.) by arguing that objects exist independent of the subject (Harman, 2018a). Ian Bogost neatly summed this up by stating, ‘all things equally exist, yet they do not exist equally’ (Bogost, 2012, p. 11). Harman explains that while previous theories ‘have asserted that reality is something ‘constructed’ by language, power or human cultural practices [i.e. *idealist*], OOO is a bluntly *realist* philosophy’ (Harman, 2018, p. 10). Contemporary philosophy is particularly well-suited for archaeology since the field is object-based. The central argument of OOO is that objects exist and possess agency, independent of the human mind mediating them, and we (or other objects) only interact with a portion of an object: their sensual properties. The real object is ‘withdrawn’ from our perception, in the manner of Heidegger (Harman, 2018, p. 22), and we perceive only the sensual properties when the object comes in contact with others. For example, we do not see the wind, but we perceive its interaction with trees or our skin (Morton, 2013, p. 86). The wind drives ships through their sails, but that interaction does not exhaust the wind; there is more to the wind than it pushing ships, carrying seeds, or passing over the hairs on our skin. The real object of the wind is withdrawn and humans, seeds, ships, bees, and other entities experience it differently, each perception of which is a fraction of the whole. The real objects are irreducible (Harman, 2018, p. 30) and their interactions with other objects – not only their interactions with humans – leads to ‘the infinite being of things’ (Morton, 2013, p. 22). This is important for maritime archaeology since sailing is a tension between the sea and atmosphere, two entities of enormous scale, while shipwrecks undergo site formation processes which are a series of object interactions.

Given the recent creation of SR and OOO during this period of global warming, aspects of contemporary philosophy were created to address issues impacting our planet (Morton, 2013). It might be argued that OOO is the first Anthropocene philosophy, which ideally situates it to address contemporary concerns. Trigger writes that ‘A history of archaeological thought requires knowledge not only of the social settings in which archaeological research is carried out but also of the ongoing development of archaeology as a practice’ (Trigger, 2006, p. 25). Today’s philosophy, along with archaeology’s engagement with it, contends with an Anthropocene world by exposing the past/present dichotomy to be an artificial distinction as archaeological sites around the world face threats due to climate change.

Archaeology has been engaging with contemporary philosophy through New Materialism and Symmetrical Archaeology, and these scholars have in turn made substantial contributions to contemporary philosophy. The work of Bjørnar Olsen (Olsen, 2010; Olsen et al., 2012), Christopher Witmore (Witmore, 2007, 2019; Olsen and Witmore, 2015), and Þóra Pétursdóttir (2017; Pétursdóttir and Olsen, 2018) are foundational to archaeology’s engagement with contemporary philosophy, especially through dialogue with philosophers Graham Harman, Levi Bryant, and Timothy Morton. Matt Edgeworth has likewise applied SR and OOO for many years and, critically, is the archaeologist on the International Commission on Stratigraphy’s Anthropocene Working Group (Edgeworth, 2016; Waters et al., 2016). This volume is fortunate to have contributions from these scholars.

Maritime archaeological application of these approaches has been limited, but this volume seeks to increase engagement. Sara Rich uses OOO in her study of cedar trees in the environment, ship construction, and metaphor (Rich, 2017). In *Shipwreck Hauntography*, she reflects on maritime archaeology and its colonial legacies, and the savior-scholar that has permeated the field (Rich, 2021). Chelsea Cohen applies New Materialism and OOO to vessel abandonment and the non-human afterlives of the structures (Cohen, this volume). The author has used OOO to challenge the idealist foundations of cognitive landscape theory, specifically maritime cultural landscapes, in order to understand the agency of the objects involved in seafaring (Campbell, 2020). In particular, this work shifts to a conception of the sea as a *hyperobject*, an entity of vast geographical and temporal scale (Morton, 2013). In another article the author argues that archaeology is undergoing a change in the Anthropocene as the role of artifacts recedes and ecofacts, hyperfacts, and archaeo-energy come to the foreground, drawing on several maritime examples (Campbell, 2021). There are several archaeologists who use maritime case studies (Edgeworth, 2011; Normark, 2014), and philosophers who use maritime archaeology (Bogost, 2012; Harman, 2016; Mentz, 2020), but it is hoped that within the field engagement continues to grow.

Discussion: Why Theory?

In reviewing the trajectory of maritime archaeological theory certain trends emerge. Each theoretical approach has aspects of the past that it reveals, but also limitations. For this reason different theoretical perspectives advance distinct interpretations. This is the worrisome thing about the general lack of explicit theory in maritime archaeology: by being theory agnostic or failing to outline the theory used, one defaults to one's inherent worldview. For many this 'default mode' is a return to archaeology before engagement with philosophical concepts in the 1960s or a research design that excludes theory (Trigger, 2006, p. 303), resulting in thin descriptive accounts of archaeological sites. Muckelroy's concern for the amount of data necessary to synthesize a theory (and thereby a discipline) reveals the anxiety that maritime archaeology has experienced around theory (Muckelroy, 1978, p. 10); after all, Pétursdóttir conceived of the theory of Drift from items on a Norwegian beach (Pétursdóttir, this volume). Theorizing does not require a certain amount of data, only a willingness for intellectual experimentation and contemplation. After all, each of us is a theory-builder (Carey, 2009, p. 22); it is the intrinsic nature of how we understand the world.

Matthew Johnson writes that 'theory is the order we choose to put facts in' (2006, p. 118). In order to internalize information from the outside world, all observations are theory-laden. 'All archaeologists see description and classification as (at least partial) goals of archaeology, and description and classification are scientific activities. Moreover, these activities are not purely observational; they are also theory-laden. Regardless of whether one classifies an artifact as to function, style, or technological features, he makes use of a theoretical framework' (Salmon, 1976, p. 376). However, as Kehoe notes, certain paradigms dismiss or fail to see certain data (1990, p. 29), or what we might term lacking explanatory ability. This is because there is information that each theoretical approach cannot perceive (Spencer-Brown, 1979, p. 50). Morton writes that 'for every system of meaning, there must be some opacity for which the system cannot account, which it must include-exclude in order to be itself' (2013, p. 89). Therefore, when Abbot Ealdred saw a shipwreck, his theory-laden observation connected it to the Biblical flood, while Alberti connected the

Nemi shipwrecks to lost knowledge that needed a rebirth in his own time. Bass observes a ship as a product of a specific temporal and cultural context, while Richards observes ship graveyards products of specific human behaviours. There is no theory-less maritime archaeology, only archaeologists who fail to articulate the theory they are applying.

Theory helps to create an informed perspective, as each archaeologist carries biases. 'Archaeological interpretations consciously and unconsciously (it is often impossible to determine which) echo current concerns. These relate to a vast array of issues, including globalization, American hegemony, international terrorism, pandemics, rising debt loads, environmental pollution, the changing role of government, and the disintegration of the family. Current understandings of ideologies, such as Marxism, neoconservatism, and nationalism, also color interpretations of the past' (Trigger, 2006, p. 484). Each of us (as observers) are theory-builders and our current social contexts inform us, but also create biases. The aim of a new theory should be to create a better-informed method of explaining our observations and research questions, while identifying and limiting our biases. Explicit research designs outline the approach used and force one to consider their underlying assumptions (Banning, 2002), or avoid a Ruling Theory (Rodgers et al., 2005). 'The test of any good idea in archaeology, whatever its source, is whether it helps archaeologists look for things in the archaeological record that they might otherwise overlook or underrate' (Terrell, 2003, p. 74). No one can deny that, for example, Richards' theory of ships' graveyards significantly improves interpretation of sites, as well as prospection of new ones, through understanding abandonment behaviors.

Which theory should you adopt? Looking back we can see new theories derided by previous paradigms in each period. Pushed to the limits of their explanatory ability, any theory can be made to sound absurd. Often new theories are couched in these terms, such as Gibbins' claim that Post-Processualism 'denies the "reality" of data' (1992, p. 83). Maritime cultural landscapes hardly seems as radical as Processualists' first reaction to it. When assessing new theories look not to the extremes, but toward the center. Does this theory offer explanatory ability beyond other approaches? As advocated by Adams' eclecticism and Trigger's pragmatism, archaeology can benefit from a multivocality of theory: the Medieval ships found in Turkey's Yenikapı harbour (Kocabaş, 2015), for example, can be interpreted by historical particularists studying the Byzantine artifacts, Processualists analysing the timbers and sediments, Post-Processualists seeking insight into the maritime cultural landscape, and behavioralists studying abandonment depositional traits. Each has strengths and weaknesses in their explanatory ability. It is as simple as choosing a theory that can address your research question.

However, theory is often a difficult sell to archaeologists. When discussing theory we should acknowledge that many people are intimidated by it – not only students, but also senior archaeologists. Theory can seem abstract, confusingly or tediously jargon-heavy, and divorced from the physicality of material culture. Hopefully, however, the preceding sections have shown that – to paraphrase the widely attributed maxim – we see archaeological sites not as they are, but as we are. Without a theoretical approach, our own cultural blindspots and biases enter our interpretation. Therefore theory – sometimes difficult and other times exciting – is necessary. Morton has written among the most prescient philosophy books of our time and he recognizes the challenge of theory. 'Theory class is intimidating, students are shy, participation is part of your grade,

and so on. So, I say to them, “The dumber a question you ask, the higher a grade you will get”. Children are well known for asking the most profound questions because these are the most simplistic: Why are you my dad? Do we have to have Wednesday? One teacher I like says, “Dare to be dumb”. Some of us theory teachers could remember that a bit more when it comes to writing theory-style prose, no? It might be quite a relief if the questions became more profound and sound more dumb, and looked less sophisticated and intense. It might be more like what Socrates was aiming at, saying that he was just a clown, an *eirōn*, from which we derive our word irony. This isn’t just a cute version of theoretical wonderment, setting the bar nice and low for intimidated students. This is the *actual* face of theoretical reflection, not just a dumbed-down version of it’ (Morton, 2019). Do not be afraid to ask dumb questions: theory does not need big data or incomprehensible jargon, it can be found among the flotsam on a beach.

Conclusion

If one were seeking to describe theory in maritime archaeology, Adams’ description of the maritime session at the 1996 Theoretical Archaeology Group conference captures the subject in its entirety: ‘highly enjoyable but... [not] well attended’ (Adams, 2006, p. 1). At the time of writing, the majority of maritime archaeologists are theory agnostic, as evident in maritime archaeology textbooks which give only cursory mention of theory. The field continues to adhere to paradigms from the 1960s-1990s which are rarely challenged, verging on dogma or sacred cows. We can look to the world around us and see prejudice, inequality, and injustice. If theories reflect the society that conceives them, do we need more publications stating that the theories we have – some of which we continue to apply after 50 years – are enough?

Theory should frame your thinking, protecting it from your unconscious biases and, ideally, give you a fresh perspective. If you only find what you expect, then your theoretical approach is failing. A theory should make you see archaeological sites not with your values and ideals, but should prompt something revelatory about the past cultures. Greater engagement with theory might offer new perspectives on the ‘big questions’ that the field grapples with, as well as offer new research avenues. If we look at the history of maritime archaeological thought and ask ‘Why theory?’, hopefully the reader reaches the conclusion that theory is an integral part of archaeology practice and new approaches help to better understand the past.

Works Cited

- de Acosta, J. (2002) *Natural and Moral History of the Indies*, J. E. Mangan (ed.). Duke University Press.
- Adams, J. (2003) *Ships, Innovation and Social Change: Aspects of Carvel Shipbuilding in Northern Europe 1450-1850*. Stockholm: University of Stockholm.
- Adams, J. (2006) ‘Editorial Article: From the Water Margins to the Centre Ground?’, *Journal of Maritime Archaeology* 1(1), pp. 1-8.
- Adams, J. (2013) *A Maritime Archaeology of Ships: Innovation and Social Change in Medieval and Early Modern Europe*. Oxford: Oxbow.
- Adams, J. and J. Rönnby (2013) ‘Landscapes, Seascapes and Ships’, in J. Adams and J. Rönnby (eds), *Interpreting Shipwrecks Maritime: Archaeological Approaches*. Southampton: Highfield Press, pp. 1-8.

- Adams, W.H. (1993) 'Historical Archaeology Strove for Maturity in the Mid-1980s', *Historical Archaeology* 27(1), pp. 23-31.
- Alberti, L.B. (1988) *On the Art of Building in Ten Books*, J. Rykwert, N. Leach, and R. Tavernor (trans.). Cambridge: MIT Press.
- Babits, L. and H. Van Tilburg (1998) *Maritime Archaeology: A Reader of Substantive and Theoretical Contributions*. New York: Plenum.
- Banning, E.B. (2002) *The Archaeologist's Laboratory*. London: Springer.
- Basch, L. (1972) 'Ancient Wrecks and the Archaeology of Ships', *International Journal of Nautical Archaeology* 1(1), pp. 1-58.
- Bass, G.F. (1966) *Archaeology Under Water*. London: Thames and Hudson.
- Bass, G.F. (1983) 'A Plea for Historical Particularism in Nautical Archaeology', in R.A. Gould, (ed.), *Shipwreck Anthropology*. Albuquerque: School for Advanced Research Press, pp. 91-104.
- Beaucaire, R. (1964) 'Les Fouilles Sous-Marines de Fos', *Revue Provence Historique* 55(1), pp. 16-25.
- Beechey, F.W. and H.W. Beechey (1828) *Proceedings of the Expedition to Explore the Northern Coast of Africa*. London: John Murray.
- Benoît, F. (1961) *L'Épave du Grand Congloué à Marseille*. Paris: Centre National de la Recherche Scientifique (Gallia Suppl. 14).
- Binford, L.R. (1972) *An Archaeological Perspective*. New York: Seminar Press.
- Binford, L.R. (1989) 'Science to Séance, or Processual to "Post-Processual" Archaeology', in L.R. Binford (ed.), *Debating Archaeology*. New York: Academic Press, pp. 27-40.
- Blue, L. and C. Palmer (2010) 'Country Boats of the Ganges Delta: An Ethnographic Study of Inland Navigation', in R. Bockius (ed.), *Between The Seas: Transfer and Exchange in Nautical Technology*. Mainz: Schnell & Steiner, pp. 479-488.
- Blundell, O. (1908) 'Notice of the Examination, by Means of a Diving-Dress, of the Artificial Island, or Crannog, of Eilean Muireach, in the South End of Loch Ness', *Proceedings of the Society of Antiquaries of Scotland* 43, pp. 159-164.
- Boas, F. (1920) 'The Methods of Ethnology', *American Anthropologist* 22(4), pp. 311-321.
- Bogost, I. (2012) *Alien Phenomenology, or What It's Like to Be a Thing*. Minneapolis: University of Minnesota Press.
- Bryant, L.R. (2011) *Democracy of Objects*. London: Open Humanities Press.
- Bryant, L.R. (2014) *Onto-Cartography: An Ontology of Machines and Media*. Edinburgh: Edinburgh University Press.
- Caldwell, J.R. (1959) 'The New American Archaeology', *Science* 129(3345), pp. 303-307.
- Callon, M. (1986) 'Some Elements of a Sociology of Translation: Domestication of the Scallops and Fishermen of St Brieuc Bay', in J. Law (ed.), *Power, Action and Belief: A New Sociology of Knowledge*. London: Routledge, pp. 196-223.
- Campbell, P.B. (2020) 'The Sea as a Hyperobject: Moving Beyond Maritime Cultural Landscapes', *Journal of Eastern Mediterranean Archaeology Heritage Studies* 8(3), pp. 1-22.
- Campbell, P.B. (2021) 'The Anthropocene, Hyperobjects and the Archaeology of the Future Past', *Antiquity* 95(383), pp. 1315-1330.
- Campbell, P.B. and Flemming, N.C. (in prep.) *Antiquities Under the Sea: The Origins of Archaeology Under Water*. Honor Frost Foundation General Series. Leiden: Sidestone.
- Carey, S. (2009) *The Origin of Concepts*. Oxford: Oxford University Press.

- Casson, L.S. (1953) 'Sea-Digging', *Archaeology* 6(4), pp. 221-228.
- Collingwood, R.G. (1939) *An Autobiography*. Oxford: Oxford University Press.
- Conlin, D. (1998) 'Ship Evolution, Ship "Ecology", and the "Masked Value Hypothesis"', *International Journal of Nautical Archaeology* 27(1), pp. 3-15.
- Connery, C. (2006) 'There Was No More Sea: The Supersession of the Ocean, from the Bible to Cyberspace', *Journal of Historical Geography* 32(3), pp. 494-511.
- Cullen, B.S. (2000) *Contagious Ideas: On Evolution, Culture, Archaeology and Cultural Virus Theory*. Oxford: Oxbow.
- Darwin, C. (1871) *The Descent of Man*. London: John Murray.
- Dawkins, R. (1976) *The Selfish Gene*. Oxford: Oxford University Press.
- Dolwick, J.S. (2008) 'In Search of the Social: Steamboats, Square Wheels, Reindeer and Other Things', *Journal of Maritime Archaeology* 3(1), pp. 15-41.
- Dolwick, J.S. (2009) "'The Social" and Beyond: Introducing Actor-Network Theory', *Journal of Maritime Archaeology* 4(1), pp. 21-49.
- Dowson, T.A. (2000) 'Why Queer Archaeology? An Introduction', *World Archaeology* 32(2), pp. 161-165.
- Dunnell, R.C. (1995) 'What Is It That Actually Evolves?', in P.A. Teltser (ed.), *Evolutionary Archaeology: Methodological Issues*. Tucson: University of Arizona Press, pp. 33-50.
- Edgeworth, M. (2011) *Fluid Pasts: Archaeology of Flow*. Bristol: Bristol Classical Press.
- Edgeworth, M. (2016) 'Grounded Objects. Archaeology and Speculative Realism', *Archaeological Dialogues* 23(1), pp. 93-113.
- Ekman, C. (1942) 'Stora Kraveln Elefanten', in A. Zettersten (ed.), *Svenska Flottans Historia I*. Malmö: Allhems Förlag, pp. 89-98.
- Ellmers, D. (1973) 'The Earliest Report on an Excavated Ship in Europe', *International Journal of Nautical Archaeology* 2(1), pp. 177-179.
- Flatman, J. (2003) 'Cultural Biographies, Cognitive Landscapes and Dirty Old Bits of Boat: "Theory" in Maritime Archaeology', *International Journal of Nautical Archaeology* 32(2), pp. 143-157.
- Flatman, J. (2011) 'Places of Special Meaning: Westerdahl's Comet, "Agency", and the Concept of the "Maritime Cultural Landscape"', in B. Ford (ed.), *The Archaeology of Maritime Landscapes*. New York: Springer, pp. 311-329.
- Gibbins, D. (1992) 'Review of Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference', *International Journal of Nautical Archaeology* 21(1), pp. 82-84.
- Gould, R.A. (1983a) *Shipwreck Anthropology*. Albuquerque: University of New Mexico Press.
- Gould, R.A. (1983b) 'Looking Below the Surface: Shipwreck Archaeology as Anthropology', in R.A. Gould (ed.), *Shipwreck Anthropology*. Albuquerque: University of New Mexico Press, pp. 3-22.
- Graeber, D. and D. Wengrow (2021) *The Dawn of Everything*. London: Allen Lane.
- Günther, R.T. (1903) 'The Submerged Greek and Roman Foreshore Near Naples', *Archaeologia* 58(2), pp. 499-560.
- Harman, G. (2015) *Quentin Meillassoux: Philosophy in the Making (Speculative Realism)*. Edinburgh: Edinburgh University Press.
- Harman, G. (2016) *Immaterialism*. Cambridge: Polity Press.

- Harman, G. (2018a) *Object-Oriented Ontology: A New Theory of Everything*. London: Penguin.
- Harman, G. (2018b) *Speculative Realism*. Cambridge: Polity Press.
- Harris, M. (1968) *The Rise of Anthropological Theory: A History of Theories of Culture*. New York: Thomas Y. Crowell.
- Harris, O.J.T. and Cipolla, C.N. (2017) *Archaeological Theory in the New Millennium: Introduction to Current Perspectives*. Oxford: Routledge.
- Harris, S. (2017) *The Linguistic Past in Twelfth-Century Britain*. Cambridge: Cambridge University Press.
- Hasslöf, O. (1958) 'Carvel Construction Technique Nature and Origin', *Folk-liv: Acta Ethnologica Europaea* 22, pp. 49-60.
- Hasslöf, O. (1963) 'Wrecks, Archives, and Living Tradition: Topical Problems in Marine-Historical Research', *Mariner's Mirror* 49(3), pp. 163-177.
- Hasslöf, O. (1972) 'Main Principles in the Technology of Ship-Building', in O. Hasslöf, H. Henningsen, and A.E. Christensen (eds), *Ships and Shipyards, Sailors, and Fishermen: Introduction to Maritime Ethnography*. Copenhagen: University of Copenhagen Press.
- Hocker, F. (2004) 'Shipbuilding: Philosophy, Practice, and Research', in F. Hocker and C. Ward (eds), *The Philosophy of Shipbuilding: Conceptual Approaches to the Study of Wooden Ships*. College Station: Texas A&M University Press, pp. 1-11.
- Hodder, I. (1985) 'Postprocessual Archaeology', *Advances in Archaeological Method and Theory* 8, pp. 1-26.
- Hodder, I. (2012) *Entangled: An Archaeology of the Relationships Between Humans and Things*. Oxford: Wiley-Blackwell.
- Hooke, R. (1705) *The Posthumous Works of Robert Hooke*. London: Royal Society.
- Ingold, T. (1993) 'The Temporality of the Landscape', *World Archaeology* 25(2), pp. 152-174.
- Ingold, T. (2008) 'When ANT Meets SPIDER: Social Theory for Arthropods', in C. Knappett and L. Malafouris (eds), *Material Agency*. New York: Springer, pp. 209-215.
- Johnson, M.H. (2006) 'On the Nature of Theoretical Archaeology and Archaeological Theory', *Archaeological Dialogues* 13(2), pp. 117-132.
- Johnson, M.H. (2010) *Archaeological Theory: An Introduction*. 2nd ed. Oxford: Wiley-Blackwell.
- Jomard, E.F. (1822) *Description de l'Égypte, ou Recueil des Observations et des Recherches Aui Ont Été Faites en Égypte Pendant L'Expédition de L'Armée Française*. Paris: Impr. Impériale.
- Kehoe, A.B. (1990) 'Small Boats and Large Ideas', in T.L. Carrell (ed), *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference*. Rockville: Society for Historical Archaeology, pp. 26-30.
- Kocabaş, U. (2015) 'The Yenikapi Byzantine-Era Shipwrecks, Istanbul, Turkey: A Preliminary Report and Inventory of the 27 Wrecks Studied by Istanbul University', *International Journal of Nautical Archaeology* 44(1), pp. 5-38.
- Lamboglia, N. and A. Pederzini (1965) 'Albenga', in J. du P. Taylor (ed.), *Marine Archaeology*. London: Hutchinson, pp. 53-66.
- Latour, B. (1987) *Science in Action*. Cambridge: Harvard University Press.
- Latour, B. (1993) *We Have Never Been Modern*. Cambridge: Harvard University Press.

- Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.
- Leland, J. (1768) *The Itinerary of John Leland the Antiquary*, T. Hearne (ed.). 3rd ed. Oxford: James Fletcher.
- Löfgren, O. (1981) 'Manniskan i Landskapet- Landskapet i Manniskan', in L. Honko and O. Löfgren (eds), *Tradition och Miljö: Ett Kulturrekologiskt Perspektiv*. Lund: Liber Läromedel, pp. 235-261.
- Lyell, C. (1830) *Principles of Geology*. London: John Murray.
- Lyell, C. (1863) *Geological Evidence of the Antiquity of Man*. London: J.M. Dent & Sons.
- Malaval, B. and G. Jondet (1912) *Le Port d'Alexandrie*. Cairo: Imprimerie Nationale.
- Mccarthy, M. (2001) *Iron and Steamship Archaeology: Success and Failure of the SS Xantho*. New York: Springer.
- McCoid, C. H. and L.D. McDermott (1996) 'Toward Decolonizing Gender: Female Vision in the Upper Paleolithic', *American Anthropologist* 98(2), pp. 319-326.
- McDermott, L. (1996) 'Self-Representation in Upper Paleolithic Female Figurines', *Current Anthropology* 37(2), pp. 227-275.
- McGhee, F.L. (1997) 'Toward a Postcolonial Nautical Archaeology', *Assemblage* 3(1).
- McGrail, S. (1997) 'Early Frame-First Methods of Building Wooden Boats and Ships', *Mariner's Mirror* 83(4), pp. 76-80.
- McGrail, S. (1998) *Ancient Boats in North-West Europe: The Archaeology of Water Transport to AD 1500*. London: Longman.
- McGraw, J.J., S. Wallot, P. Mitkidis, and A. Roepstorff (2014) 'Culture's Building Blocks: Investigating Cultural Evolution in a LEGO Construction Task', *Frontiers in Psychology* 5(1017), pp. 1-12.
- McLaughlin, M.L. (1988) 'Humanist Concepts of Renaissance and Middle Ages in the Tre- and Quattrocento', *Renaissance Studies* 2(2), pp. 131-142.
- McManamon, J. (2016) *Caligula's Barges and the Renaissance Origins of Nautical Archaeology Under Water*. College Station: Texas A&M University Press.
- Meide, C. (2013) *The Development of Maritime Archaeology as a Discipline and the Evolving Use of Theory by Maritime Archaeologists*. Dissertation Position Paper No. 2, Department of Anthropology, College of William and Mary, Williamsburg, Virginia.
- Mentz, S. (2020) *Ocean*. London: Bloomsbury.
- Merlin, A. (1908) 'Statues de Bronze Trouvées Près de Mahdia', *Comptes Rendus des Séances de l'Académie des Inscriptions et Belles-Lettres* 52(4), pp. 245-254.
- Mommsen, T.E. (1942) 'Petrarch's Conception of the "Dark Ages"', *Speculum* 17(2), pp. 226-242.
- Morton, T. (2007) *Ecology Without Nature*. Cambridge: Harvard University Press.
- Morton, T. (2013) *Hyperobjects: Philosophy and Ecology After the End of the World*. Minneapolis: University of Minnesota Press.
- Morton, T. (2016) *Dark Ecology: For a Logic of Future Coexistence*. New York: Columbia University Press.
- Morton, T. (2019) *Humankind: Solidarity with Non-Human People*. London: Verso.
- Muckelroy, K. (1978) *Maritime Archaeology*. Cambridge: Cambridge University Press.
- Mulvey, L. (1975) 'Visual Pleasure and Narrative Cinema', *Screen* 16(3), pp. 6-18.

- Neale, F. (2000) *William Worcestre: The Topography of Medieval Bristol*. Bristol: Bristol Record Society.
- Nieremberg, J.E. (1635) *Historia Naturae*. Antwerp: Balthasar Moretus.
- Normark, J. (2014) 'Water as a Hyperfact', *Current Swedish Archaeology* 22(1), pp. 183-206.
- O'Brien, M.J. and S.J. Shennan (2010) 'Issues in Anthropological Studies of Innovation', in O'Brien, M.J. and S.J. Shennan (eds) *Innovations in Cultural Systems: Contributions from Evolutionary Anthropology*. Cambridge: MIT Press, pp. 3-17.
- O'Sullivan, A. and C. Breen (2007) *Maritime Ireland: An Archaeology of Coastal Communities*. Gloucestershire: Tempus.
- Olsen, B. (2010) *In Defense of Things: Archaeology and the Ontology of Objects*. Plymouth: AltaMira.
- Olsen, B., M. Shanks, T. Webmoor, and C. Witmore (2012) *Archaeology: The Discipline of Things*. Berkeley: University of California Press.
- Olsen, B. and C. Witmore (2015) 'Archaeology, Symmetry and the Ontology Of Things. A Response to Critics', *Archaeological Dialogues* 22(2), pp. 187-197.
- Palmer, C. (2000) 'The Evolution of Traditional Boat Design: A Different View', *Maritime Life and Times* 8, pp. 491-516.
- Parker, A.J. (2001) 'Maritime Landscapes', *Landscapes* 2(1), pp. 22-41.
- Pétursdóttir, Þ. (2017) 'Climate Change? Archaeology and Anthropocene', *Archaeological Dialogues* 24(2), pp. 175-205.
- Pétursdóttir, Þ. and B. Olsen (2018) 'Theory Adrift: The Matter of Archaeological Theorizing', *Journal of Social Archaeology* 18(1), pp. 97-117.
- Poidebard, A. (1939) *Tyr: Un Grand Port Disparu*. Paris: Librairie Orientaliste Paul Geuthner.
- Poidebard, A. and J. Lauffray (1951) *Sidon: Aménagement Antiques du Port de Saida*. Beirut: Ministère des Travaux Public.
- Pomey, P. (1988) 'Principes et Methodes de Construction en Architecture Navale Antique', *Navires et Commerces de la Mediterranee Antique* 33(3), pp. 397-412.
- Preest, D. and J.G. Clark (2019) *The Deeds of the Abbots of St Albans: Gesta Abbatum Monasterii Sancti Albani*. Suffolk: Boydell Press.
- Prorok, B.K. de (1924) 'Recent Researches on the Peninsula of Carthage', *Geographical Journal* 63(3), pp. 177-187.
- Puillon de Boblaye, É. Le (1836) *Expédition Scientifique de Morée: Ruines de la Morée*. Paris: F.G. Levrault.
- Ransley, J. (2007) 'Rigorous Reasoning, Reflexive Research and the Space for "Alternative Archaeologies": Questions for Maritime Archaeological Heritage Management', *International Journal of Nautical Archaeology* 36(2), pp. 221-237.
- Ransley, J. (2008) 'Time for a Little Pedagogical Reflection?', *Journal of Maritime Archaeology* 3(2), pp. 53-58.
- Ransley, J. (2010) 'Boats are for Boys: Queering Maritime Archaeology', *World Archaeology* 37(4), pp. 621-629.
- Rathje, W. and C. Murphy (2001) *Rubbish! The Archaeology of Garbage*. Tucson: University of Arizona Press.
- Revue Archéologique (1931) 'Les Fouilles Sous-Marines de Chersonnèse', *Revue Archéologique* 34, p. 204.

- Rich, S.A. (2017) *Cedar Forests, Cedar Ships: Allure, Lore, and Metaphor in the Mediterranean Near East*. Oxford: Archaeopress.
- Rich, S.A. (2021) *Shipwreck Hauntography: Underwater Ruins and the Uncanny*. Amsterdam: Amsterdam University Press.
- Rich, S.A., C. Sievers-Cail, and K. Patterson (2022) 'What Is there to Do if You Find an Old Indian Canoe? Anti-Colonialism in Maritime Archaeology', *Heritage* 5(4), pp. 3664-3679.
- Richards, N. (2008) *Ships' Graveyards: Abandoned Watercraft and the Archaeological Site Formation Process*. Gainesville: University Presses of Florida.
- Rodgers, B.A., N. Richards, and W.R. Lusardi (2005) "'Ruling Theories Linger": Questioning the Identity of the Beaufort Inlet Shipwreck', *International Journal of Nautical Archaeology* 34(1), pp. 24-37.
- Said, E.W. (1978) *Orientalism*. New York: Pantheon.
- Salmon, M.H. (1976) "'Deductive" Versus "Inductive" Archaeology', *American Antiquity* 41(3), pp. 376-381.
- Shanks, M. (1992) *Experiencing the Past: On the Character of Archaeology*. London: Routledge.
- Smith, A.T. (2006) 'Undisciplined theory', *Archaeological Dialogues* 13(2), pp. 158-163.
- Smith, S.O. (1990) 'Fair Wind, Fair Gender, Fair Due', in T.L. Carrell (ed.), *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference*. Rockville: Society for Historical Archaeology, pp. 38-40.
- Smyth, W.H. (1854) *The Mediterranean: A Memoir Physical, Historical, and Nautical*. London: John W. Parker.
- Spencer-Brown, G. (1979) *Laws of Form*. New York: E.P. Dutton.
- Spencer-Wood, S. (1990a) 'Beyond Reification', in T.L. Carrell (ed.), *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference*. Rockville: Society for Historical Archaeology, pp. 30-34.
- Spencer-Wood, S. (1990b) 'Stretching the Envelope in Theory and Method', in T.L. Carrell (ed.), *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference*. Rockville: Society for Historical Archaeology, pp. 21-44.
- Staniforth, M. (2003) 'Annales-Informed Approaches to the Archaeology of Colonial Australia', *Historical Archaeology* 37(1), pp. 102-113.
- Staniforth, M. and M. Nash (2008) *Maritime Archaeology: Australian Approaches*. New York: Springer.
- Svoronos, J.N. (1902) 'Τα Ευρηματα Του Ναυαγιου Των Αντικυθηρων', *Ephēmeris Archaeiologikē* 20(1), pp. 145-172.
- Terrell, J. E. (2003) 'Archaeological Inference and Ethnographic Analogies: Rethinking the "Lapita Cultural Complex"', *Archaeological Papers of the American Anthropological Association* 13(1), pp. 69-76.
- Tilley, C. (1994) *A Phenomenology of Landscape*. Oxford: Berg.
- Trigger, B.G. (2006) *A History of Archaeological Thought*. 2nd ed. Cambridge: Cambridge University Press.
- Tuddenham, D.B. (2010) 'Maritime Cultural Landscapes, Maritimity and Quasi Objects', *Journal of Maritime Archaeology* 5(1), pp. 5-16.

- Tuddenham, D.B. (2012a) 'Cyborgs and Shipwrecks: The Management of Norwegian Underwater Cultural Heritage in the Light of Actor Network Theory', in P. Nymoen (ed.), *Årbok 2011*. Oslo: Norsk Maritimt Museum, pp. 99-148.
- Tuddenham, D.B. (2012b) 'Ship Finds and Their Management as Actor Network', *Journal of Maritime Archaeology* 7(2), pp. 231-243.
- Ucelli, G. (1950) *Le Navi di Nemi*. Rome: Libreria dello Stato.
- Ulrichs, H. N. (1843) *Topographie der Häfen von Athen*. Munich: Verlag der Bayerischen Akademie der Wissenschaften.
- Van de Noort, R. (2011) *North Sea Archaeologies: A Maritime Biography, 10,000 BC-AD 1500*. Oxford: Oxford University Press.
- Van de Noort, R. (2004) 'An Ancient Seascape: The Social Context of Seafaring in the Early Bronze Age', *World Archaeology* 35(3), pp. 404-415.
- Veth, P. (2008) 'Theoretical Approaches', in M. Staniforth and M. Nash (eds) *Maritime Archaeology: Australian Approaches*. New York: Springer, pp. 13-26.
- Veth, P. and M. McCarthy (1999) 'Types of Explanation in Maritime Archaeology: The Case of the SS XANTHO', *Australian Archaeology* 48, pp. 12-15.
- Ward, I. A. K., P. Larcombe, and P. Veth (1999) 'A New Process-Based Model for Wreck Site Formation', *Journal of Archaeological Science* 26(5), pp. 561-570.
- Waters, C.N. et al. (2016) 'The Anthropocene is Functionally and Stratigraphically Distinct from the Holocene', *Science* 351(6269), 10.1126.
- Westerdahl, C. (1992) 'The Maritime Cultural Landscape', *International Journal of Nautical Archaeology* 21(1), pp. 5-14.
- Westerdahl, C. (1995) 'Traditional Zones of Transport Geography in Relation to Ship Types', in O. Olsen, J.S. Madsen, and F. Rieck (eds), *Shipshape*. Roskilde: The Viking Ship Museum.
- Westerdahl, C. (2011) 'The Binary Relationship of Sea and Land', in B. Ford (ed.), *The Archaeology of Maritime Landscapes*. New York: Springer, pp. 291-310.
- Whitewright, J. (2008) *Maritime Technological Change in the Ancient Mediterranean: The Invention of the Lateen Sail*. PhD, Department of Archaeology, University of Southampton.
- Wiley, G. and P. Phillips (1958) *Method and Theory in Archaeology*. Chicago: University of Chicago Press.
- Witmore, C. (2007) 'Symmetrical Archaeology: Excerpts of a Manifesto', *World Archaeology* 39(4), pp. 546-562.
- Witmore, C. (2019) 'Hypanthropos: On Apprehending and Approaching That Which is in Excess of Monstrosity, with Special Consideration given to the Photography of Edward Burtynsky', *Journal of Contemporary Archaeology* 6(1), pp. 136-153.
- Wylie, A. (1997) 'The Engendering of Archaeology: Refiguring Feminist Science Studies', *Osiris* 12(1), pp. 80-99.
- Zimmerman, A. (2001) *Anthropology and Antihumanism in Imperial Germany*. Chicago: University of Chicago Press.
- Zwick, D. (2013) 'Conceptual Evolution in Ancient Shipbuilding: An Attempt to Reinvigorate a Shunned Theoretical Framework', in J. Adams and J. Rönnby (eds), *Interpreting Shipwrecks: Maritime Archaeological Approaches*. Southampton: Highfield Press, pp. 46-71.